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ABSTRACT

Research has inadequately examined why health has become a problem in the day care setting. Health regulations for day care have not been researched in the day care setting per se but have been imposed on day care by the medical community working from a hospital model. Day care research has presumed that having antecedent health regulations in place would control the outcome of a good health program. Taken altogether, research has failed to uncover the source of the day care health problem or to offer solutions because it has concentrated on the structural variables of health component regulations and has ignored the functional variables of daily interpersonal and environmental transactions in day care centers. This dilemma can be resolved by applying to the evaluation of the health component of day care the qualitative and quantitative methodologies developed to study the functional variables of socioemotional and cognitive development. (Appended are charts depicting inadequate through excellent programmatic responses to several health component variables, as well as tables that elaborate a framework for studying several functional/transactional variables and that specify research methodologies particularly apt for studying health transactions from the separate perspectives of staff, parents, and children. A three-page list of references concludes the document.) (RH)

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HEALTH: A KEY FACTOR IN THE EVALUATION OF DAY CARE

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Abstract

This paper briefly outlines some of the health threats posed by day care and examines why research has failed to find an answer to the problem. The author proposes using a systems theory framework and Stake's model of evaluation to study the functional variables of day care which have previously been ignored in favor of studying the structural variables. The author suggests a variety of qualitative methodologies which would be appropriate for evaluating the health component of day care.

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Health: A Key Factor in the Evaluation of Day Care

Introduction

This paper is based on the following presuppositions:

1. Health is a critical component of day care.

2. The health component of day care includes hygiene, sanitation, nutrition, dental health, safety, physical well-being, and health education.

3. Research has inadequately examined why health has become a problem in the day care setting.

4. Health regulations for day care have not been researched in the day care setting per se but have been imposed on day care by the medical community working from a hospital model.

5. Day care research has presumed that having antecedent health regulations in place would control the outcome of a good health program.

6. Research has failed to uncover the source of the health problem, or to offer solutions, because it has concentrated on the structural variables (as described in antecedent regulations) of the health component and ignored the functional variables of daily transactions.

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6. Research has failed to uncover the source of the health problem, or to offer solutions, because it has concentrated on the structural variables (as described in antecedent regulations) of the health component and ignored the functional variables of daily transactions.

7. Qualitative and quantitative methodologies developed to study the functional variables (transactions) in the spheres of socio-emotional and cognitive development may be applied effectively in the evaluation of the health component of day care.

Clarification of Terms

Within the context of this paper, structural variables refer to parts of the pre-planned organization of day care as a static entity. A policy about the attendance of sick children, a set ratio of sinks to students, and nutritional guidelines for snacks are all examples of structural variables. They can be mandated by regulation or encouraged by setting standards. In contrast, functional variables refer to the actual happenings of day care, what occurs when people try to live within the bounds of the structural variables. Calling/not calling a parent to pick up a sick child, supervising one to eight children at one sink, and children eating/refusing to eat their raw vegetables are examples of functional variables.

All structural variables are antecedent to the functional variables in that they exist prior to opening the doors of the day care center every day. They may, or may not, be the ideal but they do constitute the limits within which each day care system operates. Regulations and standards are all examples of antecedent structural variables while the daily transactions of day care are examples of functional variables. The functional variables mediate between the antecedents and outcomes of day

care. They are the process by which regulations are translated into action.

A Health Concern

Dating back to the 1960's, the medical community has expressed a growing concern about the day care situation as a health hazard (Morris, Peters,& Chipman,1964; Peters,1964; Goldsmith,1960; Loda, Glezen, & Clyde,1972; Schuman,1983). This concern has been reflected in the proliferation of health regulations and standards surrounding day care. Books of regulations and standards such as the Head Start Program Performance Standards(1984), the Child Welfare League of America Standards for Day Care Service(1973). the Federal Interagency Day Care Regulations(1978), and the Accreditation Criteria and Procedures of the National Academy of Early Childhood Programs(1984) all contain sections devoted to health. These attempt to control the structural variables of the health component of the day care program (e.g. sanitation, policies excluding sick children, existence of a health curriculum) through a checklist perspective. Yet even though health and safety codes are often vigorously enforced , health threats continue to exist and the problem seems to have escalated. Day care transmission of Shigellosis and Giardiasis, two major causes of diarrhea, is well documented (Gelbach,1973; Black, Dykes, Anderson, Wells, Sinclair, Gary, Hatch & Gangarosa,1977; Weissman, Gangarosa, Schmerler, Marier & Lewis,1975). Viral hepatitis has also been associated with day care centers

(Hadler, Erben, Francis, Webster, & Maynard,1980; Storch, McFarland, Kelso, Heilman, & Caraway,1979; Benenson, Takafuji, Bancroft, Lemon, Callahan, & Leach,1980; Silva,1980). Upper respiratory infections are also spread through the day care connection and are particularly difficult to control (Eichenwald,1982; Centers for Disease Control, 1981,1982). The current child care literature reflects a strong concern about the health threat posed by day care centers not only to the children, but also to the child care workers and the community (Logue,1978; Highberger & Boynton,1983; Schuman,1983; Whitebook & Ginsburg, 1983; Kendall, 1983).

Why, when infectious diseases have been controlled in group situations such as hospitals for many years, and this same body of information about sanitation and hygiene has been made available to day care centers, does the problem still exist? The antecedent regulations are in place, but the outcome of a healthy environment has not ensued. The problem must lie in the intervening variables between antecedents and outcomes, the daily transactions of day care.

For example, the NAEYC Accreditation Criteria(1984) states in its health section: "Staff wash their hands with soap and water before feeding and after diapering or assisting children with toileting or nose wiping (p. 32)." Such a practice would certainly cut down on the spread of disease, but the daily situation of day care must be examined to see if this is, in fact, happening. Is it probable, or even possible, with a staff

of two in a group of 16 3-year-olds, five of whom have colds, that one of these two adults could leave the room to wash her hands with hot soap and water in an adjacent lavatory every time she wiped a child's nose? Even if hot running water were available in the room, how much of the adult's time would actually be spent in handwashing? What needs to be examined is the staff's attitude towards this regulation. Is it one of rigorous adherence? Benign neglect? Antipathy because it is unrealistic? What happens in a situation where two children sneeze and need their noses wiped urgently just before snack time? The daily occurrences of day care need to be examined to see how rigorously the antecedent regulations are being followed and the reasons behind their ineffectiveness.

Another example of the inadequacy of health evaluation based on structural variables is the failure of the health education curriculum of Head Start. Head Start Program Performance Standards (1984) state: "The plan shall provide for an organized health education program for program staff, parents and children which ensures that: (4) Health education is integrated into ongoing classroom and other program activities (p.32)." The only health education curriculum for Head Start that was ever evaluated, Healthy, That's Me(Harrison,1971) was found to be a failure in its first two years, not because of its content but because of its poor implementation (Hendricks,1984). Zamoff and associates (Zamoff & Regan,1972; Zamoff,1973) used individual and group interviews with Head Start staff, directors and

parents to ascertain that although the program was technically in place "the curriculum was not presented to the teachers in an organized manner, no training was provided regarding implementation, and the curriculum did not arrive on time for incorporation into the existing programs" (Hendricks, 1984,p.29).

Zamoff's study of the functional variables involved in implementing a health education curriculum pointed out both problems and solutions. Yet the latest summary of Head Start research states ambiguously, "Based on the results of a major Head Start health curriculum evaluation, the success of efforts to educate parents about child health is unclear"(U.S. Dept. of Health & Human Services,1983,p.56). The report seems to be trying to ignore the implications of Zamoff's report that just having a health curriculum in place is not the same as having a successful health education program.

Many questions need to be addressed when evaluating a health education curriculum. What are staff/parent/children's attitudes toward the curriculum? Is staff training effective? How are parents involved? Do they reinforce the curriculum at home? How much time in a daily program is actually devoted to health education? What kinds of activities do the children engage in to reinforce the health curriculum? The studies of Healthy, That's Me were a pioneer attempt to use functional variables to evaluate a health education curriculum but these studies need to be repeated and expanded in other research to judge the effect

of the health education curriculum on the entire health component.

A Framework for Research

A model for evaluation such as Stake (1967) proposed that considers antecedents, transactions and outcomes will be useful for the study of such health concerns. Shifting the emphasis from antecedents to transactions makes systems theory an obvious choice for a conceptual framework because systems theory is interested in studying movement. It predicts a response to one act will be the cause of another in an ongoing pattern of interrelationships. These patterns of interrelationships are the functional variables which need to be studied in the day care system.

Day care is a complex system of both animate and inanimate components, all of which interact with each other. At the center of the system is the child, whose well-being is assumed to be the ultimate goal of day care. Interacting with the child are the center staff, the other children at the center, and the parents. All of these elements are also interacting with the program and the day care facility in the ambience of social policy.

The antecedent variables of the system, such as the actual physical facility, the curriculum, the number of children, the staff ratio and training, etc. are static elements.

The essence of the system is what happens when the staff and children and parents interact in combination with these structural characteristics.

Optimal child development presumes good health for all the people in the day care system, not just the children. Consequently, research must study how the physical facility, the curriculum, the size of the group and all the other structural variables impact on the health of the people in the system and how the people interact with the structural variables of the health component and affect the health of each other.

Methodologies

The health component of day care can be studied best with a variety of methodologies, both formal and informal. The formal health inspection establishes that the antecedent structural variables are in place. Formal testing, screening and record-keeping can ascertain the outcomes of the health component as was done in Loda, et. al.'s(1972) study of respiratory disease in day care.

Several different research approaches are needed to adequately study the functional, transactional variables. One of the best available tools for examining the interaction of the physical environment of day care and the people in the system is the Early Childhood Environment Rating Scale(Harms & Clifford,1980). Some questions under the personal care and adult needs section are directly relevant to health and could be used together with additional questions written with a health

focus and employing the same measurement scale. Specifically, the first item under the Personal Care Routines (1. Greeting/departing) could be altered to reflect the need for screening the children for symptoms of illness as they arrive. The scale would range from Inadequate (1) if no plans were made to screen children on arrival and symptomatic children were often ignored to Excellent (7) if trained staff were delighted to watch for symptomatic children as they arrive and comments were exchanged between parents, children and staff about the child's state of health with a caring, supportive attitude exhibited by the staff. (see appendix 1.) The questions about meals/snacks, diapering/toileting, and personal grooming already address health concerns. The nap/rest category could be rewritten to reflect a greater concern about bed linens and head/toe positioning as a means of controlling disease spread. (See Appendix 1.) An additional section could be written to evaluate the daily scheduling of hygiene activities and the type of supervision these these activities received.

With regard to adult needs, additional questions could be written about opportunities for health/ First Aid training for staff, provisions for parent participation in the health education curriculum, and provisions for enlisting parents' help in maintaining the health of the day care community.

Questions addressing the effectiveness of the health curriculum could be modeled after questions in the language-reasoning experience and creative activity sections of

the scale. For example, the proposed expansion could include section on the formal and informal tuition of health concepts. Formal tuition could be evaluated on the presence of a comprehensive health curriculum, materials and activities which reinforced the health curriculum, and supplementary materials for parents. Informal tuition would be evaluated by monitoring staff attitudes, encouragement of children in following good health practices and modeling of good health practices. (See Appendix 2.)

An evaluation technique that can be adapted to studying the health education component in its functional variables is one devised by McSpadden for use in the Central City Day Care Center of Salt Lake City, Utah (Fuqua,1984). It assessed center-wide concerns by using parents to administer questionnaires to other parents. Two of the five questionnaires used are pertinent: Health and nutrition and parent involvement. Classroom functioning itself was assessed by an ongoing process of monthly planning and evaluation meetings between parents and teachers. In such a format, teachers could report on what aspects of health were being covered in class and get direct feedback from parents on how the children seemed to have responded to the activities. The third component of McSpadden's ongoing evaluation technique dealt with the individual child. It employed formal and informal screening and individual testing to evaluate the child's needs and strengths. These techniques would be useful in determining how meaningful the health

education curriculum is to the children. Employing the people in the day care system itself to participate in the evaluation process will ensure that the research reflects reality and the results will be relevant to the intended audience (Porter,1982).

Transactions lend themselves to informal evaluation techniques such as the "critical incident technique"(Rowe,1978). Staff or parents, in either a short answer questionnaire or an interview, describe in detail either a negative or positive experience in the program. Using health as a focal point, this method could yield valuable information for health assessment and be employed both on a one-to-one basis with an outside evaluator, or in staff and parent meetings.

Finally, naturalistic observation of classroom behavior as proposed by Day, Perkins and Weinthaler(1979) could be used to give a picture of the typical enactment of health routines for a program. A behavior checklist that reflects specific health practices could be used by observers who would code the behaviors for both staff and children. Each child and staff member could be observed several times over a predetermined number of days. Observations should take place over the entire program day and include everyone in the program (including kitchen staff) to insure that they reflect a valid picture of program activity.

The health component is multifaceted since it includes hygiene, sanitation, nutrition, dental health, safety, physical well-being and health education. It would have to be studied in

segments. A final judgment on the entire health component would be a conglomerate evaluation which enumerated strengths and weaknesses rather than an averaged assessment.

Table 1 elaborates a framework for studying several elements as measured against the long-term goal of the physical well-being of the children, staff and families. It proposes studying antecedents, transactions and outcomes as they affect the staff, the parents and the child, with an emphasis on transactions.

Tables 2, 3, and 4 specify which of the research methodologies previously described are particularly apt for studying health transactions from the separate perspectives of the staff (Table 2), the parents (Table 3), and the children (Table 4). All three perspectives are needed for accurate evaluation of a system where staff, parents and children are so closely interrelated.

Shelly (1982) has argued that evaluation "should address questions about what has been, what is, and what ought to be (p. 24)." The answers to a vexing health problem in day care can be found in identifying the discrepancies between what is and what ought to be. These discrepancies can only be found in the daily transactions of day care. A hospital is single-minded in its dedication to promoting good health and is usually very successful. A day care center has multiple goals and multiple needs to fill for multiple audiences. It has been less successful in promoting good health. It is essential that

health be regarded from multiple perspectives and recognized as equally important to other goals in day care. This recognition will lead to the much needed evaluation that will provide the means of implementing a successful health component in the day care system.

Conclusion

Failure of the health component in day care results in stress and dissatisfaction for parents, staff and children. That this stress and dissatisfaction is linked with health factors should be acknowledged if we wish to fairly evaluate the other components of day care. It is also unfair to parents, staff and children to ignore the health factor since it is critical to the well-being of the entire day care system.

TABLE 1

Goals:
Long term: Good health of children, staff and families.
Short term: Prevention of disease spread among children, staff and families.

	STAFF	PARENTS	CHILD
ANTECEDENTS	Health code regulations Policy on sick children Custodial regulations Policy on handwashing Parent education curriculum Sick leave policy Pre-employment physicals TB test results First Aid supplies, training requirements	Requirement to provide health records for child Requirement to provide emergency contact information Requirement to give written permission for administering medication	Record of immunization Record of physical examination Emergency contact information Pertinent health history record Policy on handwashing
TRANSACTIONS	Complying with health code Enforcing health policies Custodial work Actual use of sanitation facilities Teaching hygiene to children Supervising children's hygiene Enactment of parent education program Taking sick leave when necessary Personal hygiene, e.g. handwashing Communicating health concerns to parents Training of staff in First Aid and health	Keeping emergency contact information up-to-date Keeping immunization records up-to-date Providing written permision to administer medicine Using alternative care for sick child Communicating health concerns Making supportive/critical comments to staff Encouraging of children to comply with hygiene routines of progra	Use of sanitation facilities Learning hygiene rules Cooperation in following hygiene rules Communicating about personal health
OUTCOMES	Reduced sickness Reduced stress	Reduced sickness Reduced stress	Reduced sickness Better adjustment

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TABLE 2

STAFF TRANSACTIONS	RESEARCH METHODOLOGIES
Complying with health code	Naturalistic observation
Enforcing health policies	Modified Early Childhood Environment Rating scale
Custodial work	Naturalistic observation; Questionnaire
Actual use of sanitation facilities	Behavior checklist
Teaching hygiene to children	Planning/evaluation meetings; Questionnaire
Supervising children's hygiene	Modified ECERS
Enactment of parent education program	"Critical incident" technique; Questionnaire
Taking sick leave when necessary	"Critical incident" technique; questionnaire
Personal hygiene, e.g. handwashing	Behavior checklist
Communicating health concerns to parents	"Critical incident" technique
Training of staff in First Aid and health	Modified ECERS; Questionnaire

TABLE 3

PARENT TRANSACTIONS	RESEARCH METHODOLOGIES
Keeping emergency contact information up-to-date	Questionnaire
Keeping immunization records up-to-date	Questionnaire
Providing written permision to administer medicine	Questionnaire/ "Critical incident" technique
Using alternative care for sick child	"Critical incident" technique
Communicating health concerns	Questionnaire
Making supportive/critical comments to staff	"Critical incident" technique
Encouraging of children to comply with hygiene routines of program	Planning/Evaluation meetings between staff/parents

TABLE 4

CHILD TRANSACTIONS		RESEARCH METHODOLOGIES
Use of sanitation facilities	_ _ _ _	Behavior checklist
Learning hygiene rules	_ _ _ _	Naturalistic observations
Cooperation in following hygiene rules	_ _ _	Behavior checklist
Communicating about personal health	_ _ _	"Critical incident" technique

APPENDIX 1

Personal Care Routines

	Inadequate 1	2	Minimal 3	4	Good 5	6	Excellent 7
1. Greeting	No plans made to screen children on arrival.		Informally understood that someone will watch for symptomatic children on arrival.		Staff members assigned responsibility to watch for symptomatic children on arrival.		Trained staff are delegated to watch symptomatic children as they arrive. Comments are exchanged with parents/children re. child's state of health. Caring, supportive attitude on part of staff.
2. Nap/rest	Cots indiscriminately stacked with bedding on. No assigned cots or bed linens for each child; crowded area; children sleeping head to head; poor ventilation.		Cots stacked with bedding on but each child has assigned cot. Some crowding. Minimal ventilation		Cots stacked w/o linens. Each child has own set of marked bedding. Space is adequate. Good ventilation.		Same as 5 plus children sleeping head to toe. cots placed for privacy.

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APPENDIX 2

Health Curriculum

	Inadequate 1	2	Minimal 3	4	Good 5	6	Excellent 7
1. Using health concepts in curriculum format	No games, materials, etc. to reinforce health curriculum or to encourage health practices.		Some games, materials, etc. to reinforce health, curriculum and to encourage good health practices Not used with teacher guidance or readily available.		Sufficient games materials etc. to reinforce health curriculum and to encourage good health practices. Children use by choice with teacher available to discuss health concepts and ask children additional questions		All in 5 plus plan encouraging incorporation of health concepts into curriculum. supplementary materials for parents.
2. Encouragement of health practices	Health concepts e.g. hygiene ignored.		Staff occasionally suggest use of health concepts.		Staff encourage use of health concepts throughout day.		All in 5 plus staff model good health practices

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